How Online Students Approach Bracketing: A Survey Research Study

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Abstract: Graduate students in online educational research courses participated in a questionnaire about bracketing practices. Exploratory factor analysis led to the result that student researchers followed three approaches to their work: a) engaging strengths, b) being neutral, and c) honoring feelings. In a descriptive analysis of means, we found that students most strongly agreed that their personal interests inspired their research, that they had been frustrated by a research project, and that they questioned what they knew before they began a study. These responses led to recommendations that bracketing be formally taught and that associated practices be included in distance research courses.

Key Words: bracketing, phenomenology, distance learning, researcher bias

Bracketing means refraining from judgment or staying away from the everyday, commonplace way of seeing things (Moustakas, 1994). In practice, Creswell (2003) identified bracketing as a way in which the researcher can separate his or her own experiences from what is being studied. Husserl (1913) introduced this notion philosophically as *epoché*. He yielded to the climate of positivist science by proposing that phenomenologists use bracketing to mitigate their bias. Dowling (2007) suggested that Husserl intended bracketing to mean "completely abstaining" (p. 34) from any judgment regarding the research process. However, philosophers after Husserl taught that completely abstaining was not only impossible, but undesirable (Heidegger, 1926; Merleau-Ponty, 1945). In spite of the criticism, most scholars considered bracketing to be a necessary part of phenomenological research (Creswell, 1998; Crotty, 1998; Vagle, 2014). In many fields of study, researchers practice aspects of this powerful tool for addressing issues that affect teaching, learning, and research.

LITERATURE REVIEW

Bracketing is an operational term which connotes designs and procedures (Bednall, 2006). Because bracketing involves opening one's mind and changing one's perspective, it is a state that one crafts actively (Vagle, 2014). Vagle stated that this crafting involves practice over time, reflective feedback from others, contextual cues, and other intangible inputs. Fischer (2009) concluded that taking the time to revisit the data and to carefully choose the language used to present findings is a crucial aspect of bracketing. In addition, Wall, Glenn, Mitchinson, & Poole

(2004) described how keeping a reflective diary for bracketing, composed of pre-reflective preparation and reflection, led to learning. By continually examining issues that emerged in a reflective diary, the authors established a habit of bracketing throughout their studies. An attitude of awareness and openness has been imperative in research scholarship (Bentz, 1995). Nonetheless, researchers do not agree on how, in a practical manner, to inspire unbiased scholarship. This topic has been scrutinized for the past several years by phenomenologists (Bednall, 2006; Dowling, 2007; Fischer, 2009; Flood, 2010).

THE CONTROVERSIAL NATURE OF BRACKETING

While some researchers formally practiced bracketing, many scholars in fields of study outside of phenomenology adopted an informal practice of lessening bias without consciously calling it bracketing. These researchers included practices which were designed to improve the ability of the researcher to get a clear picture of the experience being described (Creswell, 1998). They worked to lessen the effects of unacknowledged preconceptions related to the research (Tufford & Newman, 2010). Many aspects of bracketing practice, such as personal reflection, journal-writing, and extensive literature review were almost universal habits among learners and researchers alike (Bednall, 2006; Beech, 1999). Indeed, many researchers have practiced bracketing without labeling the practice as such.

In addition, a few scholars have suggested that formal bracketing is too constrictive for learning and research to occur. For example, Charmaz (2014) warned against "voiceless, objectified recordings" (p. 318). To complicate matters, Dahlberg, Dahlberg, and Nystrom (2008) stated that working towards openness and sensitivity is in itself a methodology which imposes constraints on the interpretation. They stated that if a researcher's practice becomes systematic and methodology-bound, bracketing will not occur. Ironically, intensive bracketing practice may actually inhibit the expected benefits of bracketing. Indeed, a researcher's perspective provides context for the work and affects the conclusions (Crotty, 1998). The researcher's preconceived notions are deeply integrated into the conclusions. In fact, Haraway (1988) claimed that the view of the data depends on the researcher's standpoint. In addition, Langer (1989) explained that researchers struggle with things that offer resistance and this leads to authenticity.

TEACHING BRACKETING

In one example of teaching concepts related to bracketing, Power (2016) determined to increase his students' reflexivity through journaling assignments. He found that the reflective writing process both encouraged and showed signs of transformational learning. Power determined that a required writing process, although fraught with potential drawbacks due to the structure involved, resulted in student achievement in critical engagement in the course and in personal growth. Likewise, Godor (2016) found that the level of learning required to bring about a transformation in student perspective was more profound that a "deep/surface dichotomy" (p. 207) phenomenon. Godor argued that a dichotomous approach constrained the ways teachers could encourage learning and growth.

Leibowitz and Bozalek (2016) stated that teaching, learning, and research are all intertwined. In their three action research projects, the authors worked in South Africa to promote collaboration and social justice. The authors found that teachers, learners, and researchers needed to go beyond educational theorizing. Sensitive topics, such as bracketing, are difficult to teach (Smith, 2016). For example, in teaching a culturally-diverse group of education research students, Smith found that insights from Western textbooks were not as effective in teaching as modeling

ethical decision-making. She argued that curriculum alone did not have the power to bring about transformations in learner ethics.

ONLINE BRACKETING EXPERIENCE

In addition, because bracketing is a varied and abstract concept, it needs to be taught through reflections and stories (Vagle, 2014). This type of sharing is difficult to accomplish in a distance course (Conrad, 2005). Students who learn in an online environment face additional challenges as they practice bracketing, beginning with isolation. They do not have the benefit of face-to-face modeling that allows a teacher to exemplify bracketing. In addition, many scholars practice bracketing openly without specifically naming it (Jaggar, 2013). Certainly, if teachers of online research courses assume that the ideas involved in bracketing are obvious and do not need to be delineated, then the practice may not be taught in specific detail

In fact, students who study research methods online may not have the opportunity to practice or experience bracketing. Both the number of students taking online classes and the proportion of online classes among all classes taught have more than tripled in the last few years (Allen & Seaman, 2013). Some online activities that yield greater learning include posting journals and commenting on peer journals (Daroszewski, 2004). Another online learning activity that was documented was spending time in online discussions (Thomas, 2002). In fact, in a study of student facilitators of online discussions, the practices of sharing one's opinion and posing additional questions both contributed to deeper discussions (Hew & Cheung, 2008). Additionally, in a study of distance versus on-campus learning, counseling students explained that more time in practice and less time in instruction would benefit them and their work (Nelson, 2015). In a study of the challenges students face in the online classroom, students reported difficulty arranging time to work collaboratively with one another (Sun, 2014). Menchaca and Bekele (2008) found that online students enjoyed greater learning than those in traditional classrooms when they and their online peers contributed frequently to discussions. Indeed, the stories and real-life experiences that result from practicing bracketing may be the most important conveyors of the topic.

THEORETICAL PERSPECTIVE

For this survey research, we followed a positivist framework, which was developed in the mid-19th Century by the French sociologist and philosopher Comte (Plé, 2000). One of the principles behind the idea of positivism is that the logic of inquiry is the same across all sciences. Indeed, the goal of inquiry is to explain and predict, and thereby to discover common conditions for any phenomenon. Thus, science is not the same as common sense, and researchers must be careful not to let common sense bias their research. Science should be judged by logic, and should be as value-free as possible (Mastin, 2008). The ultimate goal of science is to produce knowledge, regardless of politics, morals, values, etc. Indeed, Husserl (1913) intended bracketing to be a concept that could complement the epistemology of positivism.

Given the difficulty of sharing and teaching bracketing practices in online courses, we determined to explore the attitudes and beliefs held by our online research students. Our research questions were:

- 1. What are the attitudes towards bracketing practice that distance students bring to their classes?
- 2. Are there differences in the attitudes of researchers who prefer quantitative research when compared to researchers who prefer qualitative research?

DESIGN AND METHODOLOGY

Using Ahern's (1999) ten tips for bracketing as a guide, we created a list of potential bracketing practices. Then, we wrote a survey with five-point Likert items which encompassed these practices. We included a few demographic items (age, gender, country of origin, and years of research experience). The survey was designed to measure student attitudes towards some of the practices that may mitigate bias during a research project. We created this survey because we could not find an existing survey which measured bracketing practices. Thus, this was a pilot study of the bracketing survey. We posted the survey online through the university survey tool and we asked for participation over the course of three semesters in one academic year. Students received a small academic credit for participating if they wrote to the instructor and stated that they took the survey on the honor system. In this way, they remained anonymous. The Institutional Review Board at the university reviewed the survey and gave approval for this study.

Sixty-two students in three graduate online educational research courses took the survey. Their ages ranged from 22 to 66 years old (*M*=32.82, *SD*=9.47). Fifteen (24%) were male and 47 (76%) of the respondents were female. Most of the respondents had less than one year of experience with research (49%); 36% had one to five years of experience; and 16% had more than five years of research experience. The respondents who were asked about type of research were equally split between conducting qualitative research (13%) and conducting quantitative research (13%), while most respondents engaged in both types of research (32%). Only five (8%) of the respondents were from a nation other than the United States. The course was taught in the college of education, and the students came from backgrounds as diverse as science, music, communications, kinesiology, and literacy.

We worked through several varying exploratory factor analysis algorithms to determine how the constructs involved in bracketing may have been represented by our participants. The technique of factor analysis is a complex, multistep process, and the results are based on the decisions made by practitioners (Costello & Osborne, 2005). As differing from confirmatory factor analysis, this procedure yielded exploratory results. The most interpretable solution was a 3-factor solution, achieved by principle axis factoring with Varimax rotation. This solution resulted in three constructs: a) engaging strengths, b) being neutral, and c) honoring feelings. The Cronbach's alpha for the subscales were .48, .44, and .59, respectively. The 3-factor solution is shown in Table 1.

Results of the reliability analysis were lower than we expected (α =.70), and this suggested that some of the questions needed revision to increase consistency. For example, depending on how the participant framed the key words, *preconceived* and *gift*, the statement about preconceived ideas as gifts we bring to the research may have invoked both negative (pre-conceived) and positive (gift) responses.

Table 1
Factor Loadings for Exploratory Factor Analysis with Varimax Rotation and Principal Axis
Factoring

	Factor		
	Engaging	Honoring	Being
Items	Strengths	Feelings	Neutral
My pre-conceived ideas are a gift I bring to the	.092	.432	.113
research.			
Neutrality is required for good research.	131	.125	.416
A researcher should follow her/his feelings.	.442	.480	534
A researcher should avoid situations which bring up	042	021	.461
negative feelings.			
I write my literature review before collecting data.	.351	.020	055
I acknowledge my bias when conducting research.	213	276	066
I like to work with a team when doing research.	471	.556	078
I can be my own best critic when conducting research.	.176	.032	080
My research is a reflection of who I am at the core.	.448	.050	117
I am very good at my type of research.	.613	.358	.475

Note. Factor loadings > .35 are in boldface.

ANALYSIS OF DATA

The means and standard deviations of the Likert items which measured experience with research are listed in Table 2. We found that most of the experience item averages significantly differed from the neutral ranking (3) when we conducted one-sample t-tests. We used the Bonferroni correction and considered the test to be significant if p < .002, which is p = .05 divided by the number of items or 24 (Olejnik, Supattathum, & Huberty, 1997). For example, participants significantly agreed with the statements about all researchers having preconceived ideas and some researchers being too biased to conduct fair research. The respondents also significantly agreed that neutrality is required for good research; that researchers should hide their feelings when conducting research; that they as participants have been frustrated by a research project; and that they question what they know before beginning their research.

We administered the survey over several semesters, and after the first semester, we asked a subset of our respondents about whether they preferred qualitative, quantitative or mixed methods research (n = 36). We found very few differences in perceptions of bracketing between qualitative and quantitative researchers. As expected, self-described quantitative researchers were more likely to agree that neutrality is required for good research (M = 4.38, SD = 0.52) than primarily qualitative researchers (M = 3.38, SD = 0.92); F(2,33) = 3.77, p = .034. Tukey post hoc tests showed that the significant difference was between those who engaged in qualitative and those who conducted quantitative research, p = .032 (Figure 1).

Table 2
Means and Standard Deviations of Questionnaire Items

Questionnaire Item	M	SD	One-sample <i>t</i> -test results
All researchers have preconceived ideas.	3.85	1.03	<i>t</i> (61)=6.49, <i>p</i> <.001
My personal interests influenced my choice of	4.51	0.64	<i>t</i> (61)=18.47, <i>p</i> <.001
research project.			
There are particular types of researchers who annoy	3.30	0.78	t(61)=3.09, p=.003
me.			
Some researchers are too biased to conduct fair research.	3.70	0.73	t(61)=7.62, p<.001
I try to remain disengaged when doing research.	2.67	1.11	t(61)=2.28, p=.026
A researcher should hide her feelings when working	3.88	1.01	<i>t</i> (61)=6.79, <i>p</i> <.001
with a participant.			
I have experienced surprising results of a research	3.45	0.86	<i>t</i> (61)=4.12, <i>p</i> <.001
project.			
I have been frustrated by a research project.	4.01	0.83	<i>t</i> (61)=9.53, <i>p</i> <.001
I tend to focus on my favorite participants in research.	2.56	0.92	t(61)=-3.62, p =.001
I write my research conclusions in third person voice.	3.51	0.84	<i>t</i> (61)=4.81, <i>p</i> <.001
I question what I know before I begin a research	4.01	0.73	<i>t</i> (61)=10.88, <i>p</i> <.001
project.			
I look outside my discipline for literature review	3.62	0.70	t(61)=2.01, p=.049
articles.			
All data should be quantified.	3.10	0.92	t(39)=0.68, p=.500

Note. The responses were $1 = Strongly\ Disagree$, 2 = Disagree, $3 = Neither\ Disagree\ nor\ Agree$, 4 = Agree, $5 = Strongly\ Agree$

Unexpectedly, qualitative researchers (M = 2.25, SD = 0.89) were less likely than quantitative researchers (M = 3.29, SD = 0.49) to focus on their favorite participants, F(2,32) = 4.02, p = .028. Tukey post hoc tests showed a significant difference between qualitative and quantitative, p = .041 (Figure 2).

Unfortunately, we found dependence between gender and type of research conducted in a Pearson χ^2 test of independence, χ^2 (2) = 8.93, p = .011. In fact, males were over-represented when compared to females in the quantitative research category, and females out-represented males in the qualitative research category. Thus, the differences in type of researcher that we found necessarily reflect differences in gender, as a confounding variable.

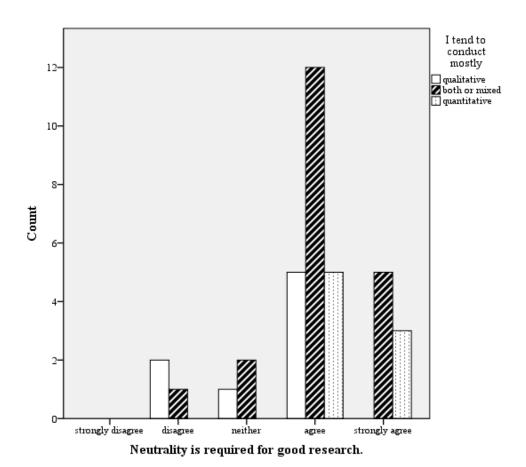


Figure 1. Responses to "Neutrality is required for good research," by type of research conducted. The responses were $1 = Strongly\ Disagree$, 2 = Disagree, $3 = Neither\ Disagree\ nor\ Agree$, 4 = Agree, $5 = Strongly\ Agree$.

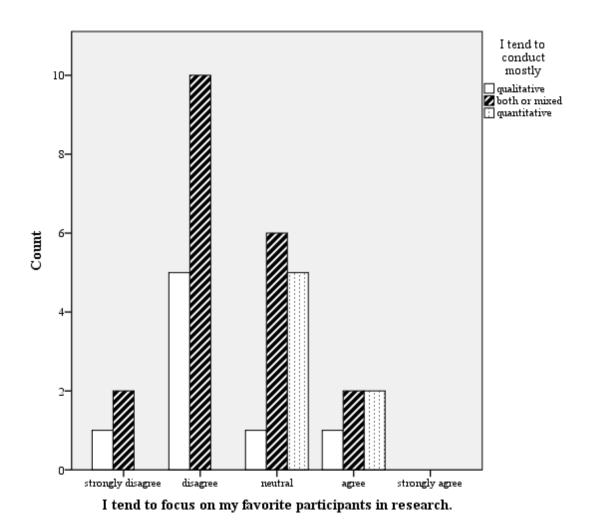


Figure 2. Responses to "I tend to focus on my favorite participants in conducting research," by type of research conducted.

DISCUSSION

We determined that student researchers have experienced surprising results in their research, and that they have wrestled with bias. Thus, this study of researcher perception of bias was an important starting point for research into the work of minimizing potential problematic effects of those preconceived notions (Hamill & Sinclair, 2010). Students of research methods may discover that the typical positivist approach is not enough to alleviate bias (Bentz, 1995). In addition, learners, teachers, and researchers alike may confront their preconceived notions in different ways, at different times, and because of different scenarios. Researcher bracketing leads to trustworthy analyses and increases the rigor of the research (Ahern, 1999). Vagle, Hughes, and Durbin (2009) stated that bracketing moves researchers to reveal themselves as their own best critics. Therefore, a willingness to address personal attitudes towards researcher bracketing may be one of the most important gifts teachers and students bring to research courses.

RELATIONSHIPS TO PROFESSIONAL PRACTICE AND LITERATURE

Our overall conclusion is that student researchers employ a variety of practices to wrestle with bias. For example, some scholars happen upon their bias serendipitously (Miller, 1995). Others need the support that can be found when working collaboratively. We found that researchers strongly agreed that they chose their project because of their personal interests. We also found that researchers questioned what they knew before they start a research project, and that they had been frustrated by research at some previous time. We found some differences in the approach to neutrality and to working with friends between researchers who call themselves quantitative and those who call themselves qualitative. We found that some researchers are more likely to trust their feelings while others prefer to approach a project with neutrality. The ability to understand these perceptions is important in addressing personal attitudes towards researcher bracketing.

In addition, we must address these attitudes in the distance learning environment. Our respondents significantly rated literature reviews, learning outside their specific discipline, and working with others as practices that they included in their research. These are aspects of bracketing practice that we can model and teach in a distance course. Teachers of online research courses might benefit from insights into teaching bracketing practices. For example, in an exploration of teaching subjectivity, Godor (2016) found that teachers needed to incorporate several approaches to teaching to be successful. Our factor analysis found students to employ these strategies for conducting research: a) engaging strengths, b) being neutral, and c) honoring feelings. Godor's factor analysis showed that learners tended to be critical reflectors, curricular minimalists, and determined workers. It follows that bracketing might be practiced and learned in styles uniquely suited to each student.

LIMITATIONS

Many of the conclusions were based on small samples. We believe that cultural differences, both in researcher approach to preconceived notions and in student approach to distance learning, are important. Unfortunately, we were not able to gather a sample with enough diversity to learn from these cultural approaches. In addition, some of the questions may have been confusing to the participants. Thus, this study might be conducted among a larger and more diverse population, and some of the items on the survey might be modified to increase reliability. We found that males tended to choose quantitative and mixed methods and females tended to choose qualitative, quantitative, or mixed methods. The lack of homogeneity between gender and choice of research requires further exploration with a larger sample.

FUTURE STUDIES

There is much to learn about researcher bracketing. The question is not *whether* the phenomenon is being influenced, but rather *how* the phenomenon is being influenced. Gearing (2004) stated that bracketing is frequently reduced to a "formless technique, value stance, or blackbox term" (p. 1429). Dowling (2007) added that there is a "confusion surrounding its nature" (p. 131). Indeed, Fischer (2009) called for more research about the specific practices and outcomes of practicing bracketing. This study would benefit from a qualitative addition. We plan to interview a variety of researchers and conduct a phenomenological study of bracketing, which will bring insight into the details of how some respondents experience bracketing.

CONCLUSION

The need to explore the experiences of researchers who practice bracketing in their phenomenological work is evident in the writings of phenomenologists. Certainly, the reflexivity, awareness, concern for participant voice, connection with others, and care that are expected in the practice of bracketing are important to researchers. These concepts are sometimes taught in distance courses, and they are briefly discussed in textbooks. However, several researchers have stated that an in-depth understanding of bracketing will improve their own work and the research of their colleagues (Ahern, 1999; Dowling, 2007; Gearing, 2004; Tufford & Newman, 2010). We have produced a description of bracketing practice attitudes for our colleagues to consider in their research practices and distance courses. In addition, we encourage teachers to find ways to incorporate direct discussions about bracketing practices so that we can learn from each other.

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